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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/699,507
Filing Date: October 31, 2003
Appellant(s): WOLLENBERG ET AL.

Michael E. Carmen
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed May 9, 2006 appealing from the Office action mailed November 4, 2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal: There is currently an appeal to the Board in related application serial numbers 10/699,508 and 10/699,510.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

GROUNDS OF REJECTION NOT ON REVIEW

The following grounds of rejection have not been withdrawn by the examiner, but they are not under review on appeal because they have not been presented for review in the appellant's brief. The pending rejections of the claims under the judicially created doctrine of obviousness type double patenting as being unpatentable over claims in co-pending application

serial numbers 10/779,422, 10/699,529, 10/699,508 and 10/699,509 are not presented for review by the Board. Therefore, these rejections will not be set forth herein.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2004/0123650	Kolosov et al.	7-2004
2003/0100453	O'Rear	5-2003
5,715,046	Tolvanen et al	2-1998
5,993,662	Garr et al.	11-1999
EP 1,233,361	Smrcka et al.	8-2002

(9) Grounds of Rejection

1. The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 39-42 are rejected under 35 U.S.C. 102(e) as being anticipated by Kolosov et al. (US 2004/0123650).

Kolosov et al teach of a high throughput testing method and apparatus for the screening of a library of material samples. The method and apparatus involve combinatorial chemistry that refers to the synthesis of a collection of diverse materials, and the screening of the materials for

desirable performance characteristics and properties. The combinatorial approach can effectively evaluate much larger numbers of diverse compounds in a much shorter period of time. The apparatus taught by Kolosov et al includes a plurality of samples supported in wells on a substrate. Kolosov et al teach that the invention can be used to screen libraries of any flowable material that may be a commercial product itself or may be a portion of a commercial product. Exemplary commercial products that can be tested with the apparatus taught by Kolosov et al include lubricants and oils. The invention can be used to analyze the resulting properties of a particular flowing material, and to analyze the relative or comparative effects that an additive has upon a particular flowable material. Additives in a flowable material to be tested include a detergent, a flow modifier, etc. See paragraph nos. 0042-0043 in Kolosov et al. The screening for the effects of different additives upon the characteristics of a flowing material is performed by measuring various properties of the material samples present in the wells on the substrate. Properties measured include the viscosity, the density, the thermal degradation, the aging characteristics, the chemical composition and the agglomeration or sedimentation of the material samples. See paragraph no. 0065 in Kolosov et al. Once the characterizing properties of the samples are determined, the results may be mathematically combined in various combinations to provide figures of merit for the properties of interest. See paragraph no. 0066 in Kolosov et al. The sample size of each sample in the wells on the substrate is typically no greater than about 20 ml, more preferably no greater than about 5 ml, and most preferred, no greater than about 0.5 ml. See paragraph no. 0054 in Kolosov et al. To form an array of samples on the substrate, Kolosov et al teach that the samples and additives are dispensed into the wells with any suitable dispensing apparatus (i.e. an automated micropipette or capillary dispenser). The

dispensing apparatus may have a heated tip, thus providing heating of the samples. Each sample is dispensed to an individually addressable region in the substrate. See paragraph no. 0053 in Kolosov et al. The plurality of samples can vary in number depending upon the intended use of the method, and the plurality of samples can form a library. A library comprises an array of two or more different samples spatially separated on a common substrate. Candidate samples within a library may differ in a definable and predefined way, such as in chemical structure, processing, mixtures of interacting components, the relative amounts of the components, the presence of additives and other reactant materials, etc. The samples are spatially separated on the substrate such that an array of samples is separately addressable for characterization thereof. The two or more samples can reside in separate containers formed as wells in a surface of a substrate or can be simply dispensed onto a common planar substrate. See paragraph no. 0057 in Kolosov et al. The apparatus taught by Kolosov et al comprises a stimulus generator 12 that applies power to a probe 14 for applying a stimulus to one or more samples 16 in the array or library of samples. The apparatus also includes a sensor or transducer 20 for monitoring a response of one or more of the samples 16 to the stimulus. The transducer 20 and the stimulus generator 12 are both in communication with a computer sub-system 23 such as a microprocessor or other computer for manipulating data. The computer sub-system 23 may be employed to receive and store data such as responses of samples 16, material properties of samples, etc. Additionally, the computer sub-system may be employed to command other components of the system such as the stimulus generator and the dispensing means, as well as to correlate responses of samples 16 to their respective material properties. See paragraph nos. 0067-0068 in Kolosov et al. The probe 14 may be translated, rotated, reciprocated or oscillated within the samples so as to mix the samples

and subject them to different forces. See paragraph no. 0070 in Kolosov et al. For contacting the probe 14 and dispensing means with the samples 16, the samples may be moved relative to the probe 14, or alternatively, the probe 14 may be moved relative to the samples 16. Combinations of these motions may also occur serially or simultaneously. An automated system may be used to move the one or more probes and the dispensing means serially or simultaneously to the various samples of a library. A suitable automated system is a robotic system such as an XYZ robot arm that has a multiple axis range of motion such as in the orthogonal X, Y, and Z coordinate axes system. This automated system is part of or in communication with the computer sub-system 23. See paragraph nos. 0073-0074 in Kolosov et al. Kolosov et al also teach that a plurality of control samples having known material properties are also monitored in the libraries along with the samples so that the responses of the samples can be compared with the known material properties of the controls. The responses of the samples in the library can be related to the known material properties by a mathematical relationship.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-9, 18-29, 38 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolosov et al in view of both O'Rear (US 2003/0100453) and Tolvanen et al (US Patent no. 5,715,046). For a teaching of Kolosov et al, see previous paragraphs. Kolosov et al fail to teach that the lubricants containing additives therein in the combinatorial array can be screened for storage stability by optically measuring the formation of sediments in each of the samples.

O'Rear teaches that the stability of compositions containing lubricant base oils with and without additives therein can be measured by determining the formation of floc or sediment in the samples during storage at a high temperature for a predetermined time. Stability testing is performed by placing a lubricant oil composition in a heated container, and periodically inspecting the composition for an increase in color or the formation of sediment. See paragraph nos. 0011 and 0034 in O'Rear. Tolvanen et al further teach that the stability of lubricating oil compositions can be determined by measuring the intensity of light scattering from the oil sample surface. The light scattering measurement serves to detect agglomerated particles in the sample. See lines 1-4 and 52-65 in column 2 of Tolvanen et al.

Based upon a combination of Kolosov et al, O'Rear and Tolvanen et al, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to screen the lubricant/additive compositions in the combinatorial array taught by Kolosov et al for storage stability by optically measuring the formation of sediments in each of the samples since Kolosov et al teach that the plurality of samples in the array are screened for various material characteristics, and both O'Rear and Tolvanen et al teach that it is common to screen lubricating

oil compositions for their storage stability based upon the amount of sediment that forms in the samples over a predetermined time period at a certain temperature. It also would have been obvious to one of ordinary skill in the art to use optical light scattering as a means for measuring sediment formation in the plurality of lubricating oil compositions present in the array of Kolosov et al since Tolvanen et al teach that the measurement of light scatter in an oil sample can be efficiently used to measure the stability of the oil sample by detecting agglomerated particles therein.

6. Claims 10-13, 30-33 and 44-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolosov et al in view of both O'Rear and Tolvanen et al as applied to claims 1-9, 18-29, 38 and 43 above, and further in view of Garr et al. For a teaching of Kolosov et al, O'Rear and Tolvanen et al, see previous paragraphs. Kolosov et al fail to teach that each of the individual test containers that hold the lubricant samples have a bar code attached thereto.

Garr et al teach that it is common in a combinatorial library of reaction products arranged in an array to have each individual reaction container identified by a unique code such as a bar code, which is optically readable. The code can also be stored in the memory of a digital signal processor on a database. See lines 3-10 in column 4 of Garr et al.

Based upon the combination of Kolosov et al, O'Rear, Tolvanen et al and Garr et al, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to label each of the individual test containers in the combinatorial array taught by Kolosov et al with a bar code since Garr et al teach that it is common in the combinatorial library art to uniquely label individual members of the library with a bar code so as to be able to identify and distinguish the samples and their unique characteristics from one another.

7. Claims 14-17 and 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolosov et al in view of both O'Rear and Tolvanen et al, as applied to claims 1-9, 18-29, 38 and 43 above, and further in view of Smrcka et al (EP 1,233,361). For a teaching of Kolosov et al, O'Rear and Tolvanen et al, see previous paragraphs. Kolosov et al fail to teach that the results of testing the plurality of lubricating oil compositions can be stored in a data carrier or transmitted to a remote location.

Smrcka et al teach of a system and method for managing information pertaining to new product development. The method comprises the steps of testing a new chemical product, and storing the results in a data carrier such as a computer readable medium. All the data obtained through testing of a chemical product is stored in a central database. Remote access to the database is available globally from any personal computer having suitable client software installed and suitable network connectivity. See paragraph nos. 0011 and 0038 in Smrcka et al.

Based upon the combination of Kolosov et al, O'Rear, Tolvanen et al and Smrcka et al, it would have been obvious to one of ordinary skill in the art to store the results of testing the plurality of lubricating oil compositions taught by Kolosov et al in a data carrier that is available from a remote access site since Smrcka et al teach that it is advantageous to store the results of testing for products being newly developed on a computer readable data carrier that is available from a remote access site in order to share and disseminate the information concerning the new product to anyone in the world researching that product.

(10) Response to Argument

It is noted that Appellant's grouping of the claims on page 5 of the appeal brief is no longer required or appropriate for inclusion therein. It is also noted that the Examiner has

performed a 35 USC 112, 6th paragraph analysis of independent system claim 39, and has found that the receptacle moving means of part b) does not comply with the requirements of 35 USC 112, 6th paragraph, but that the means for measuring storage stability recited in part c) does invoke 35 USC 112, 6th paragraph and therefore, the different means for measuring the storage stability of a lubricating oil composition disclosed in the instant specification are interpreted as being included within the scope of part c) of claim 39.

Appellants argue the rejection of the claims under 35 USC 102(e) as being anticipated by Kolosov et al by stating that the reference to Kolosov et al fails to teach a system for screening lubricant performance, under program control, comprising the specific components recited in instant claim 39 and specifically wherein the different lubricant compositions comprise a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive. Appellants specifically argue that it is not inherent that a lubricating oil composition has to contain a major amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive. However, an additive, by definition, means any substance incorporated into a base material, usually in a low concentration, to perform a specific function (i.e. a stabilizer, a preservative, dispersing agent, antioxidant, etc.). See page 20 of the Condensed Chemical Dictionary as an attachment hereto. Since Kolosov et al teach that a lubricant oil can be analyzed having an additive therein as one of the embodiments of the invention (see paragraph nos. 0042-0043 of Kolosov et al), and one embodiment of an additive in a composition is a substance incorporated into a base material in a low concentration, the teaching of Kolosov et al anticipates the recitation in part a) of instant claim 39 reciting a major

amount of at least one base oil of lubricating viscosity and a minor amount of at least one lubricating oil additive

In further response to this argument, it is noted that the reference to Kolosov et al does teach of each and every one of the components recited in instant claims 39-42 since the entire disclosure of Kolosov et al must be considered, even non-preferred embodiments. Kolosov et al teach of the general analysis of a large number of diverse compounds and that the compounds analyzed can be lubricants having an additive therein. See paragraph nos. 0042-0043 in Kolosov et al. Different lubricant compositions having additives therein are contained within test receptacles in an array or combinatorial library. Each of the test receptacles taught by Kolosov et al can contain a different lubricant composition since Kolosov et al teach that the candidate samples in a combinatorial array or library can differ from one another in a definable and predefined way, such as the amounts of components included within the composition, the types of additives included within the composition, etc. See paragraph no. 0061 in Kolosov et al. Kolosov et al also teach of measuring stability parameters of the different lubricant compositions such as thermal degradation parameters, aging characteristics and sedimentation of samples. See paragraph no. 0065 in Kolosov et al. Although a large number of different types of flowable samples are taught by Kolosov et al as being analyzed in a high throughput manner in a combinatorial library by measuring many different parameters, the fact remains that the disclosure of Kolosov et al does teach of the analysis of lubricant compositions having additives therein in a high throughput manner by placing many different types of the lubricant compositions in a plurality of receptacles, automatically moving the receptacles to locations for

measurement of parameters and measuring many different parameters of the samples including those associated with the long-term stability of the compositions.

Appellants argue the rejection of the claims under 35 USC 103 as being obvious over the references to Kolosov et al, O'Rear and Tolvanen et al by stating that nowhere does Kolosov et al disclose or suggest the high throughput method of lubricant screening as recited in the instant claims, and that nothing in Kolosov et al would lead one skilled in the art to modify the system and method for testing the genera of flowable material with any of the broad tests disclosed therein and arrive at the specifically recited high throughput method for screening lubricating oil additive compositions as recited in the instant claims. In response to this argument, it is again noted that the entire disclosure of a reference is considered prior art. Therefore, since Kolosov et al disclose the analysis of lubricant compositions having additives therein as one of the flowable materials by measuring stability parameters such as thermal degradation, aging characteristics, viscosity and sedimentation of particles in the compositions in a high throughput combinatorial library format, one skilled in the art would be motivated to perform the method and apparatus as recited in the instant claims. The primary reference to Kolosov et al does teach of a high throughput method for screening lubricating oil additive compositions under program control since Kolosov et al employ the use of combinatorial chemistry and arrays for analyzing the material properties of flowable materials such as lubricants, and such combinatorial technology is "high-throughput". See paragraph no. 0004 where combinatorial chemistry is referred to as a "high-throughput synthesis and screening methodology", and paragraph no. 0023 where Kolosov et al state that the invention refers to "a materials characterization system that can operate as a high throughput screen in a materials science research program directed to identifying,

characterizing or optimizing new or existing materials". The system and method taught by Kolosov et al is clearly automated as depicted in Figure 3 since it includes automatic means for moving the samples to parameter testing stations or moving parameter measuring means to the different samples held in wells on a substrate. See paragraph nos. 0073, 0074 and 0089 in Kolosov et al that refer to an automatic apparatus 112 including a robot arm and an XYZ movable system.

Appellants repeatably argue that the references to O'Rear and Tolvanen et al fail to cure the deficiencies of Kolosov et al since O'Rear and Tolvanen et al do not teach of a high throughput method for screening lubricating oil additive compositions, but rather, disclose blends of synthetic and non-synthetic lube base oils, or disclose measuring the stability of an oil by measuring the intensity of light scattering from the oil surface. Appellants argue that since the methods taught by both O'Rear and Tolvanen are non-automated tests and do not teach of the automatic, high-throughput method under program control as recited in the instant claims, there is no motivation or suggestion to combine the teachings of Kolosov et al, O'Rear and Tolvanen. In response to these arguments, it is noted that the primary reference to Kolosov et al teaches of a high throughout, automatic screening method and apparatus for screening a plurality of lubricant compositions, as noted above. The reference to O'Rear is used as a secondary teaching of the obviousness of measuring the stability of lubricant compositions containing additives therein by determining the formation of floc or sediment in the samples during storage at a high temperature for a predetermined time. The formation of sediments in a flowable material is one of the material properties disclosed by Kolosov et al as being measured using the automatic combinatorial chemistry system. The reference to Tolvanen et al is used as a secondary teaching

of the obviousness of determining the stability of lubricant oil compositions by measuring the intensity of light scattering from the oil sample surface. Based upon a combination of Kolosov et al, O'Rear and Tolvanen et al, it would have been obvious to one of ordinary skill in the art at the time of the instant invention to screen the lubricant/additive compositions in the combinatorial array taught by Kolosov et al for storage stability by optically measuring the formation of sediments in each of the samples since Kolosov et al teach that the plurality of samples in the array are screened for various material characteristics including the formation of sediments therein, and both O'Rear and Tolvanen et al teach that it is common to screen lubricating oil compositions for their storage stability based upon the amount of sediment that forms in the samples over a predetermined time period at a certain temperature. It also would have been obvious to one of ordinary skill in the art to use optical light scattering as a means for measuring sediment formation in the plurality of lubricating oil compositions present in the array of Kolosov et al since Tolvanen et al teach that the measurement of light scatter in an oil sample can be efficiently used to measure the stability of the oil sample by detecting agglomerated particles therein.

With respect to claim 43, Appellants argue that nowhere does Kolosov et al or Tolvanen et al disclose or suggest a system for screening lubricant performance, wherein the system includes a light source and a photocell aligned with the light source for measuring storage stability in a plurality of samples each containing a different lubricating oil composition. In response to this argument, it is noted that Tolvanen et al teach that the stability of lubricant oil compositions can be measured by determining the amount of sediment in the compositions with a measurement of light scatter. Tolvanen et al teach that a lubricant oil sample is positioned and

aligned with a light source 11 and a photocell or indicator/detector 14. The photocell 14 is aligned with the light source 11 so as to detect light scattered from sediments present in the oil sample. See lines 52-65 in column 2 and Figure 1 of Tolvanen et al. In addition, Kolosov et al teach that each of the samples in the combinatorial array is automatically moved to a position aligned with a material property sensor, and that the formation of sediments in a lubricating oil sample can be measured as one of the material properties. Therefore, it would have been obvious to one of ordinary skill in the art to use a measurement of light scatter to measure the stability of the lubricant oil compositions taught by Kolosov et al since Kolosov et al teach that one of the parameters of the lubricant compositions measured is the formation of sediment in the samples over time, and Tolvanen et al teach that sediment in lubricant samples is easily determined with a light scatter measurement. It also would have been obvious to one of ordinary skill in the art to include a light source aligned with a photocell as the material property sensor in the apparatus taught by Kolosov et al since Kolosov et al teach of measuring sediments in oil samples and of automatically aligning each of the samples in the array with a material property sensor, and Tolvanen et al teach that a light source aligned with a photocell is a type of sensor use to measure the formation of sediments in an oil sample over time.

Appellants argue that the reference to Garr et al does not cure the deficiencies of Kolosov et al, O'Rear and Tolvanen et al, and nowhere does Garr et al teach of a high throughput method for screening lubricating oil additive composition samples comprising the steps recited in the instant claims. However, as noted in the above paragraphs, the disclosure of Kolosov et al clearly teaches an automatic, high throughput method for screening multiple lubricating oil compositions that may contain additives. The secondary reference to Garr et al is used to show

the obviousness of including bar code labels on each of the sample receptacles in the combinatorial array taught by Kolosov et al so as to be able to identify and distinguish each of the samples and their unique characteristics from one another.

Appellants argue that the reference to Smrcka et al does not cure the deficiencies of Kolosov et al, O'Rear and Tolvanen et al, and nowhere does Smrcka et al teach of a high throughput method for screening lubricating oil additive composition samples comprising the steps recited in the instant claims. However, as noted in the above paragraphs, the disclosure of Kolosov et al clearly teaches an automatic, high throughput method for screening multiple lubricating oil compositions that may contain additives. The secondary reference to Smrcka et al is used to show the obviousness of storing the results of testing products on a data carrier that is available from a remote access site so as to be able to share and disseminate information concerning new products to anyone in the world interested in or researching that product.

(11) Related Proceeding(s) Appendix

It is noted that Appellants have not included a heading in the appeal brief for an appendix concerning related proceedings outside of the PTO in accordance with Rule 37 CFR 41.37 (c). However, there are no related proceedings outside of the PTO that are related to the appeal in this application.

(12) Evidence Appendix

It is noted that Appellants have not included a heading in the appeal brief for an evidence appendix in accordance with Rule 37 CFR 41.37 (c). However, there is no other supplementary evidence that has been relied upon by Appellants in rebutting the rejections put forth by the Examiner.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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